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Amendments to the Claims:

1. (Currently amended) An RF receiver apparatus, comprising:
mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal;
an analog IF-to-digital baseband converter formed on said first integrated circuit and coupled to said mixer for converting said analog IF signal into a digital baseband signal, the analog IF-to-baseband converter including an analog-to-digital converter having a first sampling frequency for a first application and having a second sampling frequency different from the first sampling frequency for a second application; and
an output coupled to said analog IF-to-digital baseband converter for transmitting said digital baseband signal.
2. (Previously amended) The apparatus of Claim 1, comprising a baseband processing apparatus formed on a second integrated circuit and coupled to said output.
3. (Original) The apparatus of Claim 1, wherein said analog IF-to-digital baseband converter includes an A/D converter for digitizing said analog IF signal to produce a digital IF signal, and a digital IF-to-baseband converter coupled to said A/D converter for converting said digital IF signal into a further digital baseband signal.
4. (Original) The apparatus of Claim 3, where said analog IF-to-digital baseband converter includes a filter coupled to said digital IF-to-baseband converter for filtering said further digital baseband signal to produce said first-mentioned digital baseband signal.
5. (Original) The apparatus of Claim 4, wherein said filter includes a decimator.
6. (Original) The apparatus of Claim 4, wherein said filter includes a quantizer.

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7. (Original) The apparatus of Claim 3, wherein said digital IF-to-baseband converter includes a CORDIC circuit.
8. (Previously amended) The apparatus of Claim 1, wherein said analog IF-to-digital baseband converter produces said digital baseband signal in parallel format, and including a parallel-to-serial converter connected between said analog IF-to-digital baseband converter and said output, said parallel-to-serial converter providing a serial formatted digital baseband signal to said output.
9. (Currently amended) A baseband processor apparatus, comprising:
an input for receiving a digital baseband signal from an RF receiver apparatus, said RF receiver apparatus comprising mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal having a first frequency for a first application and having a second frequency different from the first frequency for a second application, and an analog IF-to-digital baseband converter formed on the first integrated circuit and coupled to receive said analog IF signal; and
a digital communication processing portion coupled to said input for performing a digital processing operation on said digital baseband signal.
10. (Original) The apparatus of Claim 9, wherein said input is for receiving said digital baseband signal in serial format, and including a serial-to-parallel converter connected between said input and said digital communication processing portion for converting said digital baseband signal from serial format to parallel format and providing said parallel formatted digital baseband signal to said digital communication processing portion.
11. (Original) The apparatus of Claim 10, wherein said serial-to-parallel converter includes an input for receiving a clock signal from the RF receiver apparatus.
12. (Previously amended) The apparatus of Claim 9, formed on a second integrated circuit.

13. (Currently amended) A communication receiver, comprising:
an RF receiver apparatus responsive to a reference clock signal and including mixing circuitry for mixing an analog RF signal down to an analog IF signal,
an analog IF-to-digital baseband converter coupled to said mixer for converting said analog IF signal into a digital baseband signal, the analog IF-to-digital baseband converter including an analog-to-digital converter responsive to a first clock signal derived from the reference clock signal and a matched filter responsive to a second clock signal different from the first clock signal and derived from the reference clock signal,
an output coupled to said analog IF-to-digital baseband converter for outputting said digital baseband signal, said RF receiver apparatus formed on a first integrated circuit; and
a baseband processor apparatus having an input coupled to said output of said RF receiver apparatus for receiving said digital baseband signal from said RF receiver apparatus, and a digital communication processor coupled to said input for performing a digital processing operation on said digital baseband signal.
14. (Previously amended) The communication receiver of Claim 13, wherein said baseband processor apparatus is formed on a second integrated circuit.
15. (Previously amended) The communication receiver of Claim 14, wherein said analog IF-to-digital baseband converter comprises a coordinate rotation digital computer.
16. (Original) The communication receiver of Claim 14, wherein said baseband processor apparatus is a digital signal processor.
17. (Original) The communication receiver of Claim 13, wherein said RF receiver apparatus is provided as an integrated circuit.

18. (Currently amended) A method of using an RF receiver apparatus formed on an integrated circuit, comprising:

mixing an analog RF signal down to an analog IF signal within the RF receiver apparatus;

converting the analog IF signal into a digital baseband signal within the RF receiver apparatus;

filtering the digital baseband signal at a first sampling frequency for a first application and filtering the digital baseband signal at a second sampling frequency different from the first sampling frequency for a second application; and

transmitting the digital baseband signal.

19. (Original) The method of Claim 18, wherein said transmitting step includes transmitting the digital baseband signal in serial format.

20. (Cancelled)

21. (Cancelled)